



## Overview

Influenza activity in San Diego County has been higher so far this season compared to the 2020-21 season, when activity was lower due to COVID-19 preventive measures. Seasonal influenza vaccinations are currently available and encouraged. More than 910,000 influenza vaccinations have been recorded in the San Diego Immunization Registry this season to date.

## Key Points

### Current Week 47 (ending 11/27/2021)

- 70 new influenza detections reported
- No influenza-related deaths reported
- 3% influenza-like illness (ILI) among emergency department visits
- % of death certificates registered with pneumonia and/or influenza is not available

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## 2021-22 FYTD Season Summary

**423**

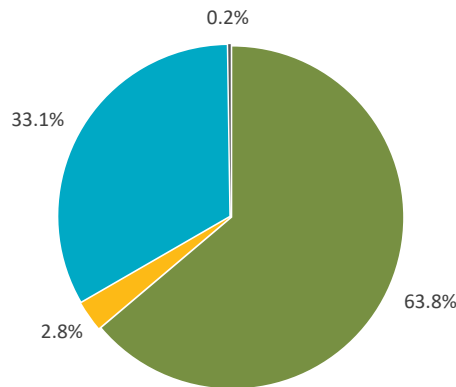
Total Cases

**0**

Deaths<sup>†</sup>

**0**

Outbreaks\*



### Virus Characteristics

- Influenza A, subtype unknown
- Influenza A (H1N1)pdm09
- Influenza A (H3)
- Influenza B, subtype unknown
- Influenza B/Victoria
- Influenza B/Yamagata
- Influenza, type unknown

<sup>†</sup> Flu deaths less than 18 years of age are reportable to CDPH.

\* In a congregate living setting, outbreaks are defined as at least one laboratory-confirmed influenza case in the setting of a cluster (≥2 cases) of influenza-like illness (ILI) within a 72-hour period.

Table 1. Influenza Surveillance Indicators.

Indicator	2021-22 Season			2020-21 Season			Prior 5-Year Average*		
	Week 47	Week 46	Total To Date	Week 47	Total To Date	Season Total	Week 47	Total To Date	Season Total
All influenza detections reported (rapid or PCR)	70	42	423	2	30	848	74	401	11,781
Percent of emergency department visits for ILI	3%	4%		3%			4%		
Percent of deaths registered with pneumonia and/or influenza	Not available	11%		8%			6%		
Number of influenza-related outbreaks <sup>∞</sup>	0	0	0	0	0	0	0	2	48
Number of influenza-related deaths reported <sup>^</sup>	0	0	0	0	0	2	0	2	123

Influenza season is July 1 – June 30, Weeks 27-26. Previous weeks' case counts or percentages may change due to delayed processing or reporting.

\*Includes FYs 2016-17, 2017-18, 2018-19, 2019-20, and 2020-21.

<sup>∞</sup>At least one case of laboratory-confirmed influenza in a setting experiencing two or more cases of influenza like illness (ILI) within a 72-hour period.

Total confirmed influenza outbreaks in prior seasons: 34 in 2016-17, 119 in 2017-18, 25 in 2018-19, 61 in 2019-20, and 0 in 2020-21.

<sup>^</sup>Current FY deaths are shown by week of report; by week of death for prior FYs. Total deaths reported in prior seasons: 87 in 2016-17, 343 in 2017-18, 77 in 2018-19, 108 in 2019-20, and 2 in 2020-21.

## Study Finds Potential Enhanced Benefit of Recombinant Flu Vaccines

A recent [study by the Centers for Disease Control and Prevention \(CDC\)](#) study showed that flu shots made using [recombinant technology](#) produced a better antibody response among health care personnel compared with both cell-based and traditional flu shots. The study, conducted during the 2018–2019 flu season, compared antibody responses among health care personal one month and six-months post-vaccination between recombinant influenza vaccines (RIV), cell culture-based inactivated influenza vaccines (ccIIV), and traditional egg-based flu shots (inactivated influenza vaccines [IIV]). The immune responses generated by recombinant vaccine outperformed those of both the cell-based and the standard dose flu vaccines made using traditional egg-based technology. While not definitive, this suggests that vaccine effectiveness may be higher for recombinant flu vaccines.

For decades flu vaccines have been produced by growing flu viruses in eggs. This production technology has some drawbacks, including the fact that growth in eggs can cause mutations in the vaccine viruses that can impact how well the vaccines work. This is particularly relevant in years where A/H3N2 is expected to dominate. Recombinant and cell-based vaccines are produced using a different production process that does not require growth in eggs.

To compare the immune responses produced by RIV and ccIIV, researchers conducted a randomized, open-label trial among health care personnel. Participants were randomized to receive either ccIIV, RIV, or IIV. Serum specimens were collected pre-vaccination, one-month post-vaccination, and six-months post-vaccination, so that researchers could compare whether antibody responses against the vaccine viruses were present among recipients of the different vaccines.

Researchers found no consistent differences in antibody responses between participants that received ccIIV and those who received the egg-based IIV. However, all three vaccine types, egg-based IIV, ccIIV, and RIV, still elicited immune responses against the flu virus strains these vaccines were designed to protect against.

This study is subject to several limitations. Researchers were unable to look at the role of prior vaccination on immune responses because most participants had received annual flu vaccines during all five flu seasons before this study. Also, the study sample may have been subject to selection bias if health care personnel who agreed to participate were more accepting of flu vaccines, and therefore were more likely to get vaccinated.

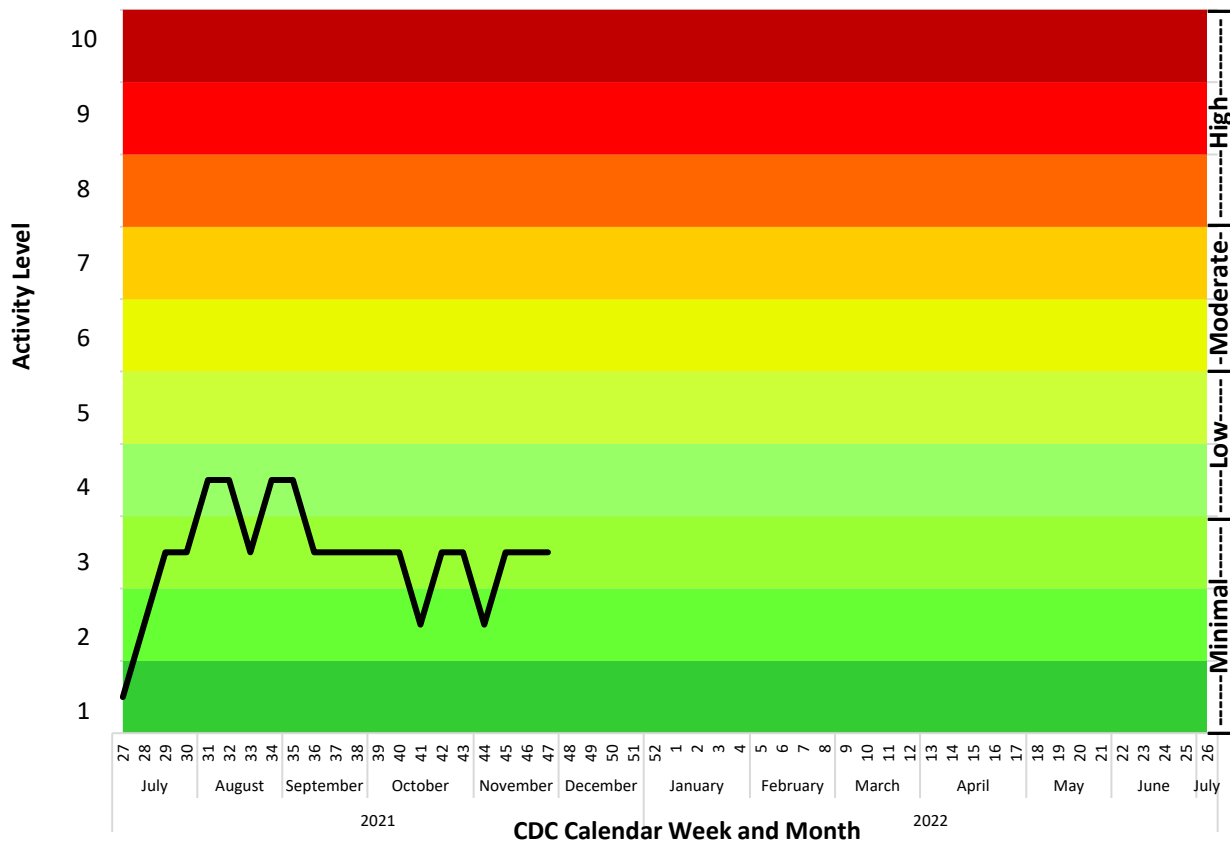
In addition, this trial focused on antibody-mediated immunity against hemagglutinin (a protein on the surface of influenza viruses) and may not directly translate to differences in protection against flu viruses. Previous trials have demonstrated that recombinant flu vaccines provide better protection than egg-based inactivated influenza vaccines in adults 50 years and older; however, large-scale efficacy trials are needed to understand whether RIV or ccIIV provide more robust protection against flu in younger adults.

These findings support a possible additional benefit from flu vaccination with recombinant flu vaccines. Additional studies are needed to assess whether these findings remain consistent over multiple seasons, with different vaccine virus compositions, and across other markers of immune response. Such studies will also need to assess vaccine benefits against laboratory-confirmed outcomes to minimize bias and ensure accuracy of the findings.

**Table 2. Influenza Cases by Week Reported, 2021-2022 Season**

Positive Test Type/Subtype	Week 47	Week 46	Total to Date	Percent to Date
Influenza A, subtype unknown	65	34	270	63.8%
Influenza A (H1N1)pdm09	0	0	0	0.0%
Influenza A (H3)	1	2	12	2.8%
Influenza B, subtype unknown	4	6	140	33.1%
Influenza B/Victoria	0	0	0	0.0%
Influenza B/Yamagata	0	0	0	0.0%
Influenza, type unknown	0	0	1	0.2%
<b>Total</b>	<b>70</b>	<b>42</b>	<b>423</b>	<b>100.0%</b>

**Figure 1. Activity Level of Emergency Department Influenza-Like Illness (ILI), 2021-22 Season to Date.**



Legend	Minimal			Low			Moderate		High	
	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6	LEVEL 7	LEVEL 8	LEVEL 9	LEVEL 10
	< mean	≥ mean and <1 standard deviation above mean	≥1 and <2 standard deviations above mean	≥2 and <3 standard deviations above mean	≥3 and <4 standard deviations above mean	≥4 and <5 standard deviations above mean	≥5 and <6 standard deviations above mean	≥6 and <7 standard deviations above mean	≥7 and <8 standard deviations above mean	≥8 standard deviations above mean

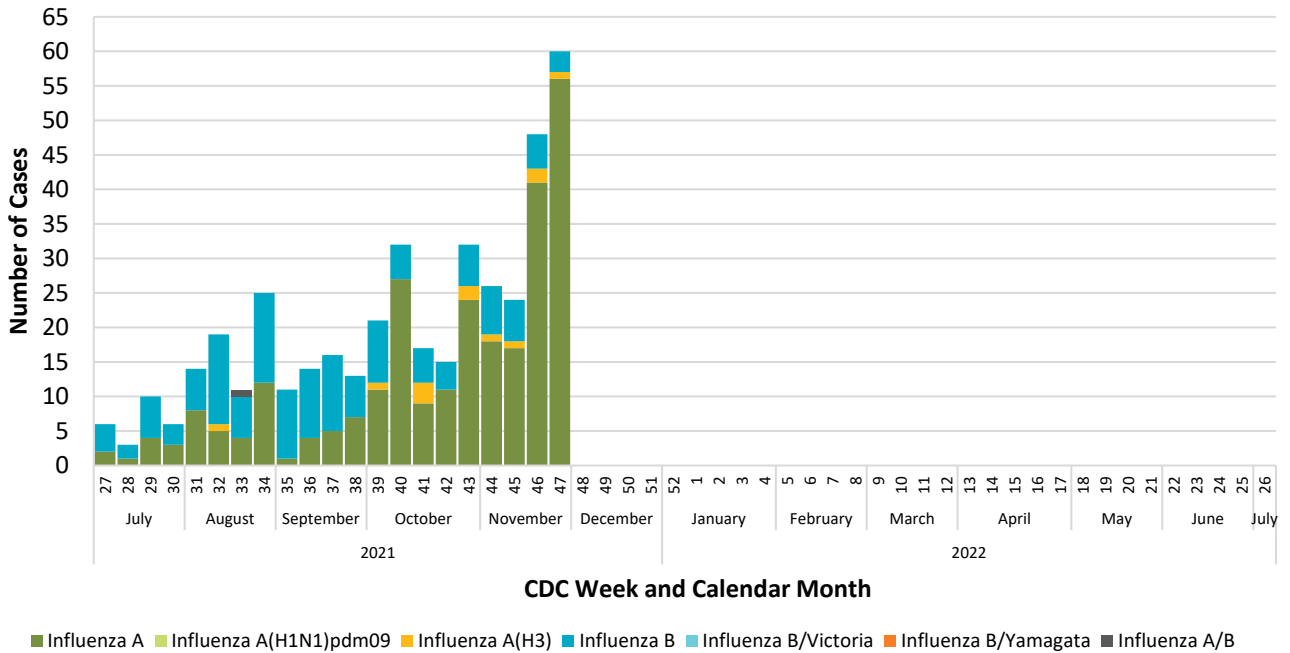
**Influenza Activity Indicator:**

The activity level compares the current week’s ED ILI% (emergency department influenza-like illness, percent of all visits) to the mean and number of standard deviations above of the mean of the ED ILI% in non-influenza season weeks (CDC disease weeks 27-39) from the current and prior four seasons.

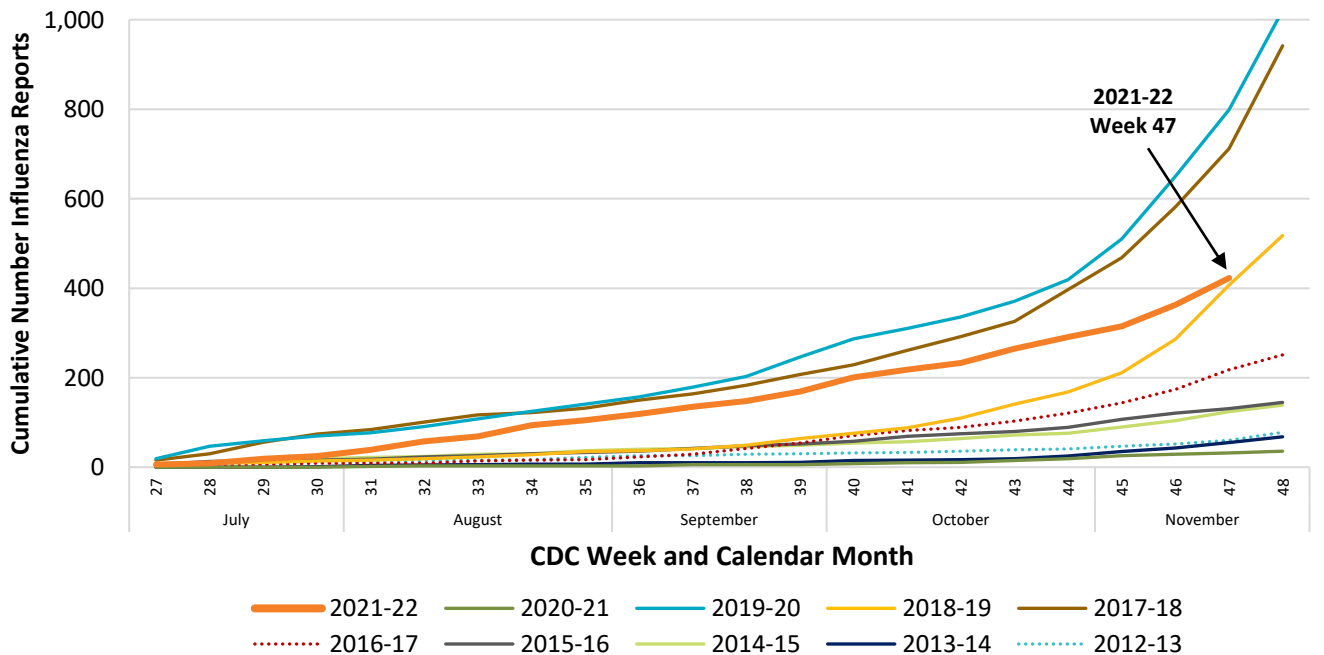
There are 10 activity levels, classified as: Minimal (levels 1-3), Low (levels 4-5), Moderate (levels 6-7), and High (levels 8-10). An activity level of 1 corresponds to when the ED ILI% is below the mean; level 2 corresponds to when the ED ILI% is less than 1 standard deviation above the mean; level 3 corresponds to when the ED ILI% is more than 1 but less than 2 standard deviations above the mean, and so on, with an activity level of 10 corresponding to when the ED ILI% is at 8 or more standard deviations above the mean.

# INFLUENZA WATCH

**Figure 2. San Diego County Influenza Detections by Type and CDC Episode Week\*, 2021-22 Season to Date (N=423).**

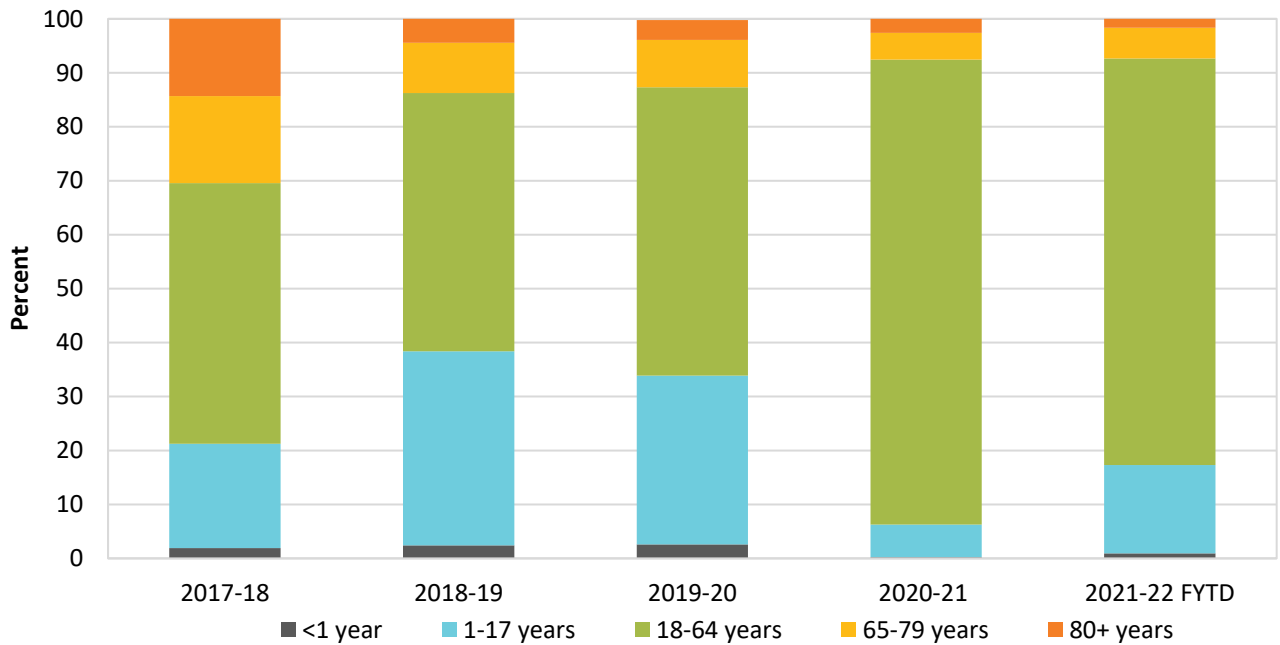


**Figure 3. Cumulative Influenza Cases by CDC Episode Week\* and Season.**

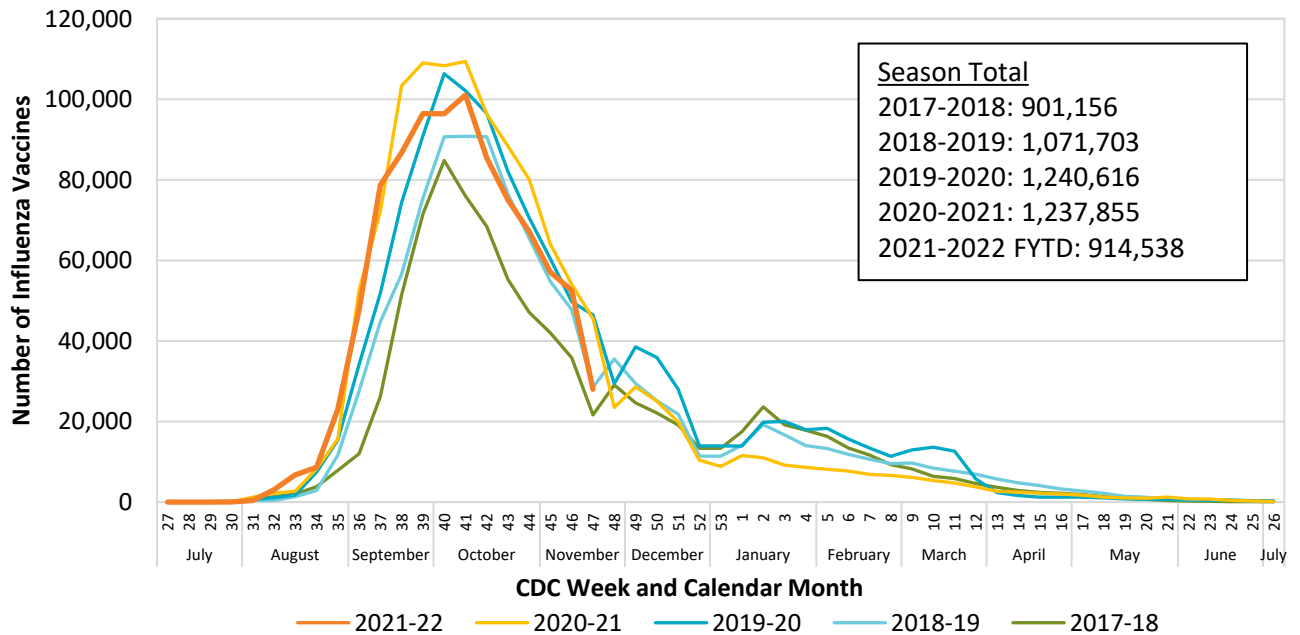


\*If case did not have symptoms or illness onset date is unavailable, the earliest of specimen collection date, date of death, or date reported is used instead.

**Figure 4. Proportion of Influenza Cases by Age Group and Season.**

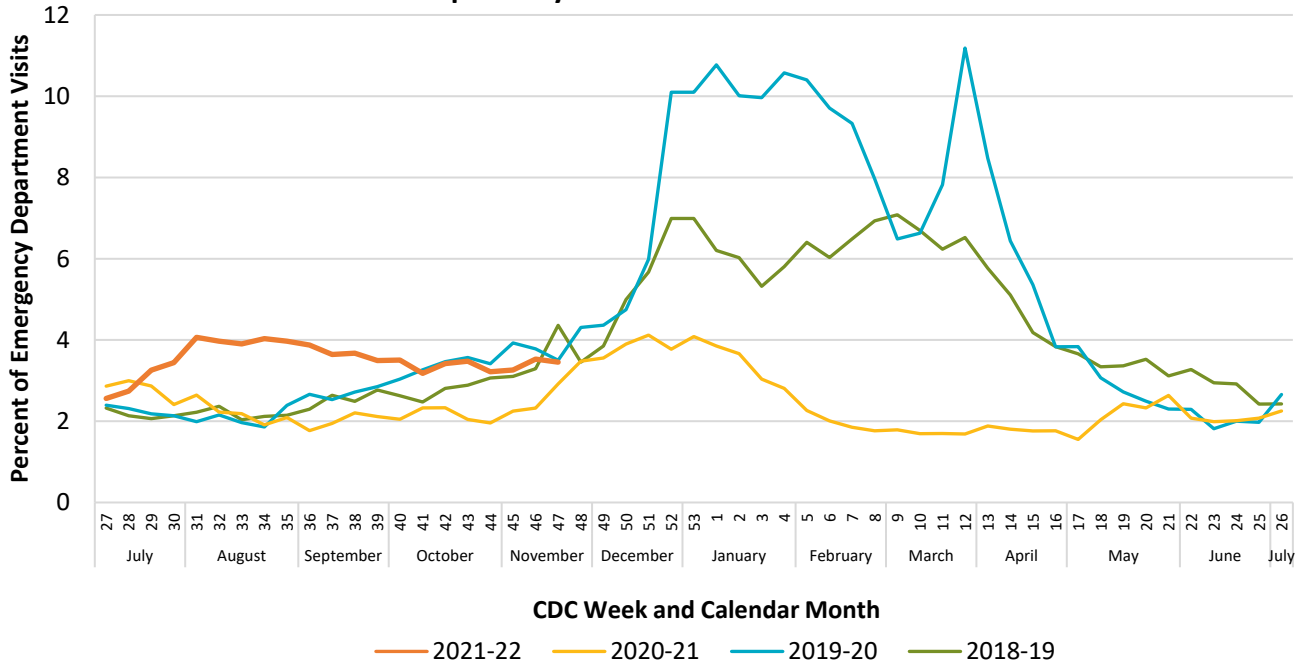


**Figure 5. Number of Influenza Vaccinations Administered\* by CDC Week and Season.**



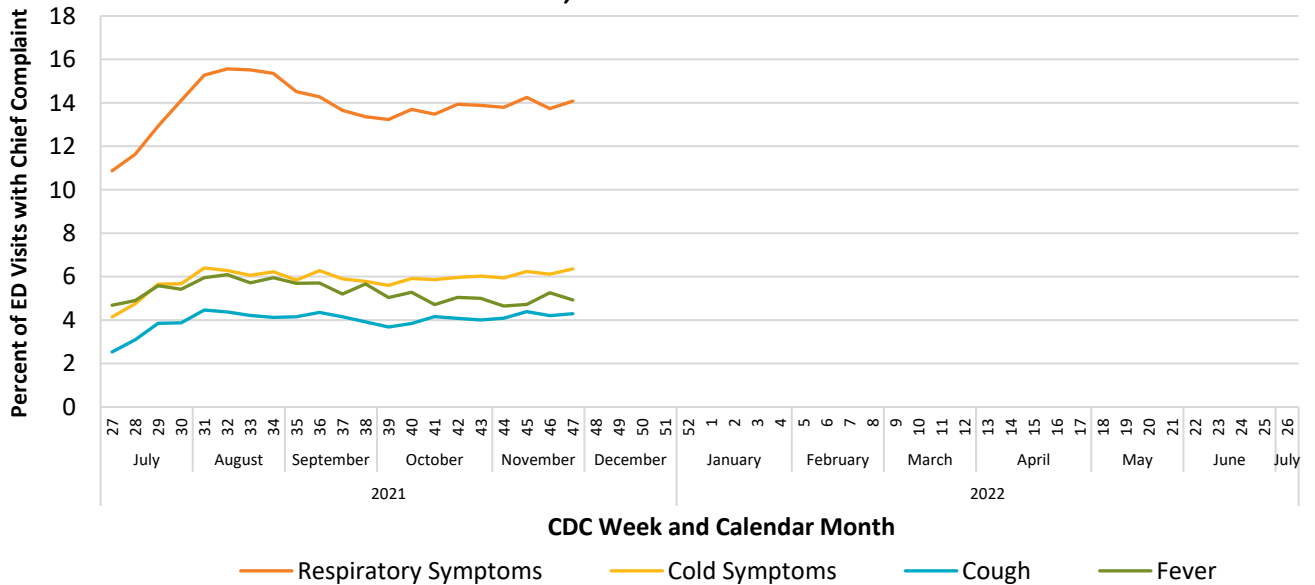
\*Influenza vaccinations administered and entered into the San Diego Immunization Registry ([SDIR](#)). Week 52 data are repeated for week 53 for seasons that do not include week 53.

**Figure 6. Percent of Emergency Department Visits for ILI Chief Complaint by CDC Week and Season\*.**



\* Week 52 data are repeated for week 53 for seasons that do not include week 53.

**Figure 7. Percent of Emergency Department Visit Chief Complaints for Cough, Cold, Fever, or Respiratory Symptoms\* by CDC Week, 2021-22 Season to Date.**



\* Respiratory category includes cough, cold symptoms, influenza-like illness, and other respiratory symptoms.

# INFLUENZA WATCH

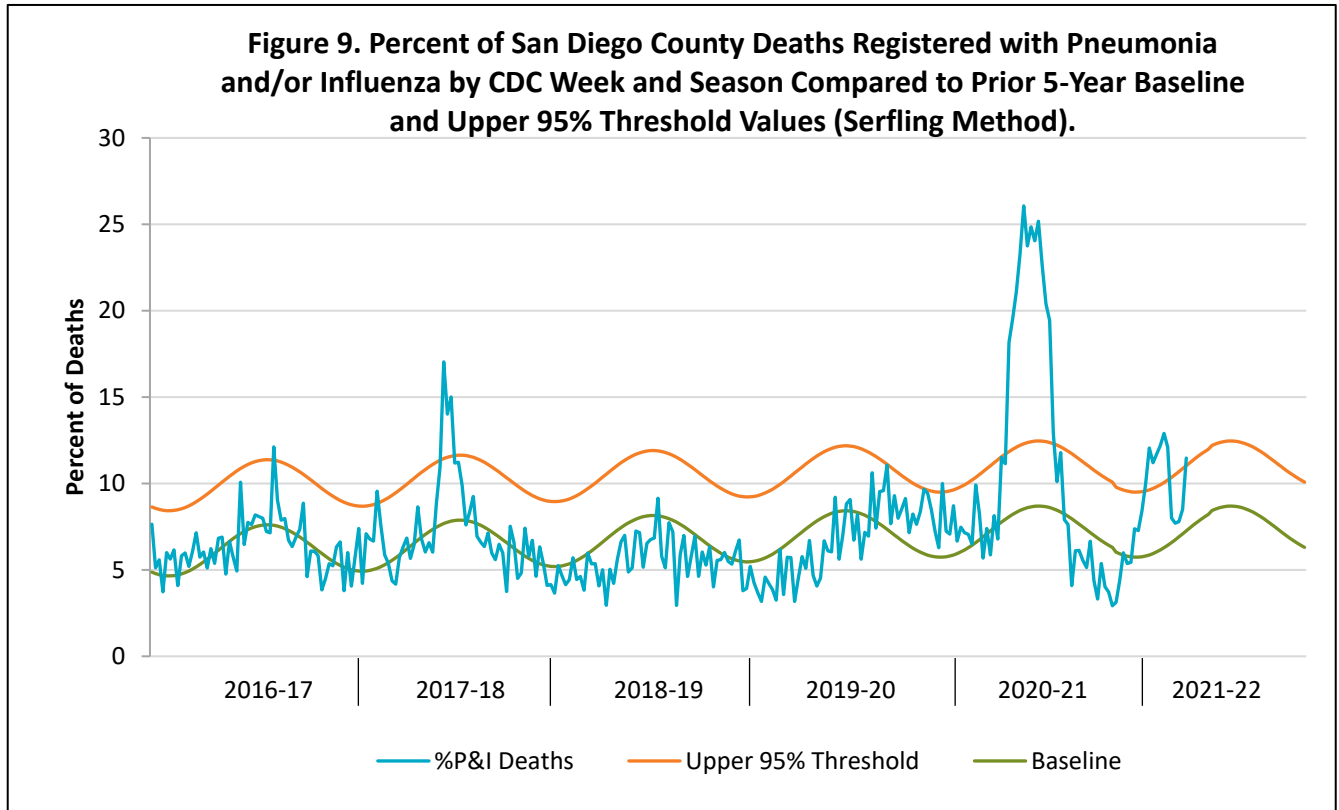
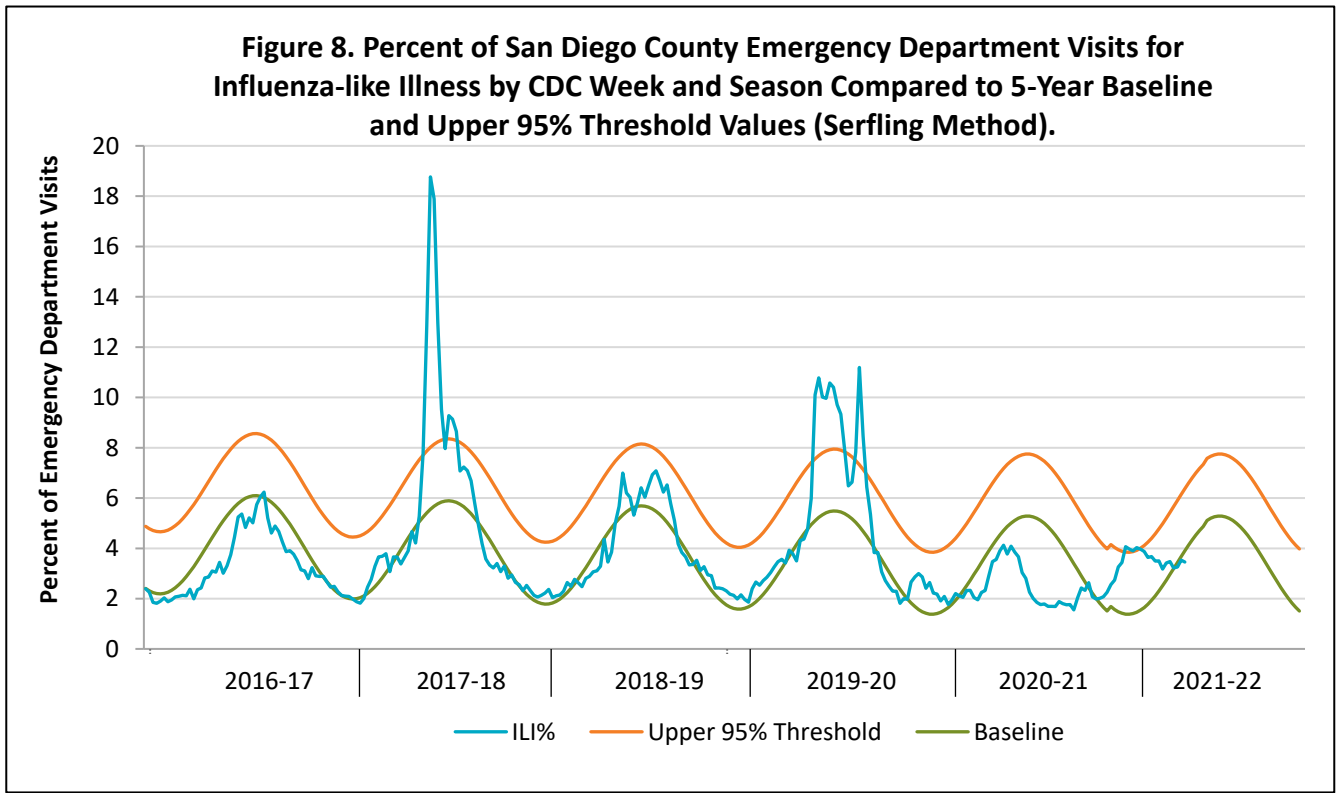


Figure 10. Influenza Deaths by Type and Season.

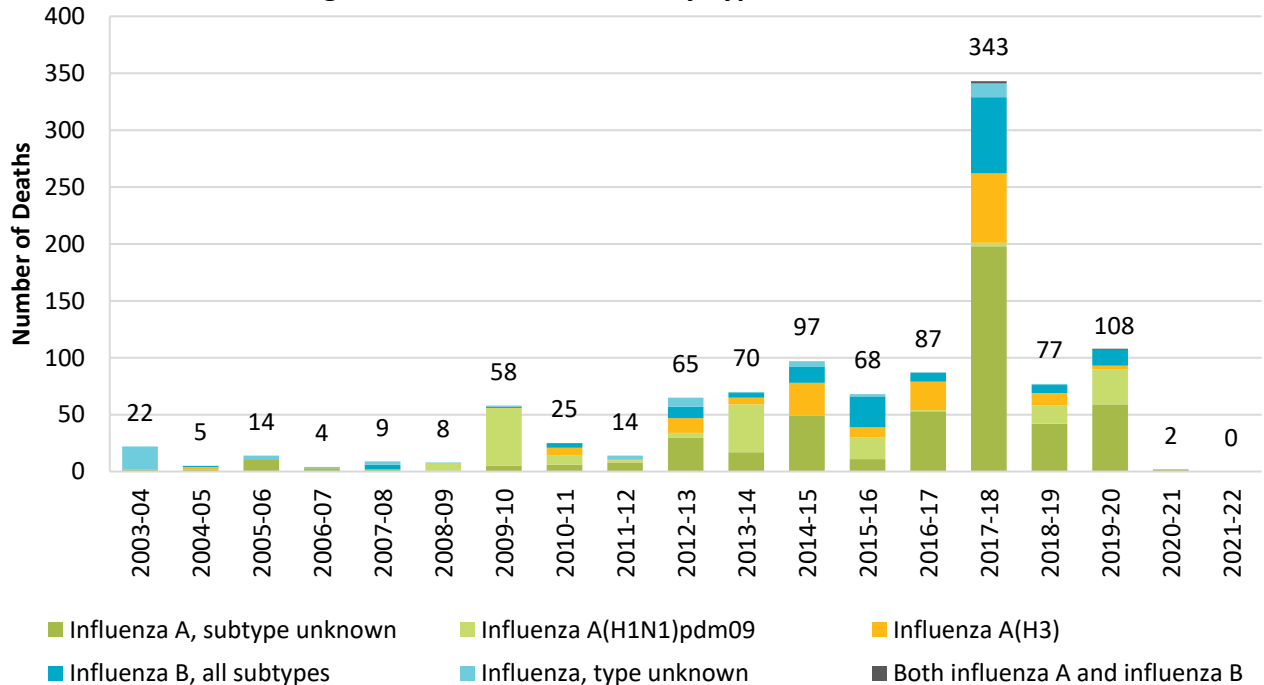
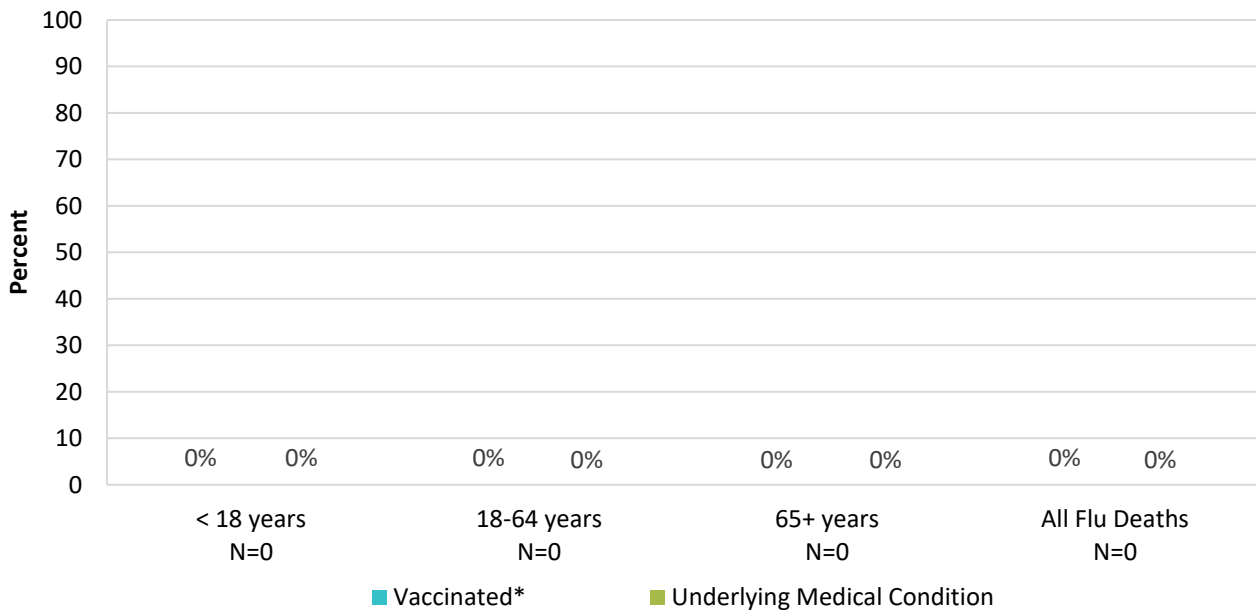


Figure 11. Percent of Influenza Deaths by Age Group, Vaccination Status, and Underlying Medical Condition, 2021-22 Season.



\*known to be vaccinated



## Influenza Reporting in San Diego County

Individual influenza cases are reportable to the County of San Diego Epidemiology and Immunization Services Branch. Please report laboratory-positive influenza results to the County Epidemiology Unit by **FAX (858) 715-6458** using a [Confidential Morbidity Report Form](#), or an [Influenza Case Report Form](#), and/or a copy of the laboratory results. Also, please indicate if the patient died and/or is a resident of a congregate living facility (if known).

Influenza specimens may be sent to [Public Health Laboratory](#) (PHL) for confirmation and subtyping. Please contact PHL at **(619) 692-8500 before submitting** or for questions and use the current PHL [Test Requisition Form](#). Contact the Epidemiology Unit by telephone **(619) 692-8499** or email ([EpiDiv.HHSA@sdcounty.ca.gov](mailto:EpiDiv.HHSA@sdcounty.ca.gov)) with questions about influenza data. Influenza outbreaks should be reported by telephone to **(619) 692-8499**.

### Resource Links

- County of San Diego Epidemiology Unit [www.sdepi.org](http://www.sdepi.org)
- County of San Diego [2020-21 Influenza Season Summary](#)
- *Influenza Watch* [Slide Deck](#) – A slide version of this report for presentations
- County of San Diego Immunization Unit (SDIZ) [www.sdiz.org](http://www.sdiz.org)
- San Diego [Immunization Registry](#) (SDIR)
- California Department of Public Health (CDPH) [Influenza Update](#)
- Centers for Disease Control and Prevention (CDC) [Influenza Surveillance](#)

## Influenza Watch Data Sources

The following sources of data are used to produce this report:

- **Influenza case reports:** Medical providers and laboratories report individual cases of confirmed influenza via fax or electronic laboratory reporting (ELR) to Public Health Services Epidemiology Unit (Epidemiology).
- **Influenza deaths:** Hospital infection control professionals report influenza-related deaths. Pediatric flu deaths (under 18 years of age) are legally reportable in California; however, San Diego County requests that all influenza-related deaths be reported for surveillance purposes. Influenza-related deaths are also identified through death certificate registration. The County Office of Vital Records notifies Epidemiology when a new death is registered with influenza listed as a cause of death or contributing condition. In addition, influenza case reports are compared to death data for San Diego County, and matches are evaluated to determine if influenza infection was related to the cause of death.
- **Percent pneumonia and influenza deaths:** The percentage of all deaths registered that had either pneumonia and/or influenza listed as a cause of death is obtained directly from the Vital Records data system on a weekly basis.
- **Influenza-like illness (ILI):** Electronic emergency department (ED) visit data are submitted to Epidemiology daily. The percent of ED visits for ILI or flu (based on chief complaints or diagnosis) is calculated for each week. ILI is defined as fever and cough and/or sore throat.
- **Influenza outbreaks:** In a congregate living setting, outbreaks are defined as at least one laboratory-confirmed influenza in the setting of a cluster ( $\geq 2$  cases) of influenza-like illness (ILI) within a 72-hour period. Influenza outbreaks are reportable in California. Epidemiology identifies outbreaks when facilities call to report. Other potential outbreaks are identified when multiple cases share an address or have a residential address that matches a skilled nursing or long-term care facility.
- **Number of vaccines:** The San Diego Immunization Registry (SDIR) provides weekly updates on the number of flu vaccinations given based on the number of flu vaccinations registered by participating providers.

For information on COVID-19 in San Diego County, please see the [COVID-19 Watch](#) weekly surveillance report. Additional COVID-19 data and a link to subscribe to the COVID-19 Watch are available on the San Diego County COVID-19 data [website](#).